Aquifer Exemption History Summary and Court Case Findings

Throughout the 30 plus years of ISR uranium mining in Texas, EPA Region 6 has consistently concurred with the State of Texas in issuing aquifer exemptions (AEs) based on the clear language provided in the rule at 40 CFR § 146.4, Criteria for exempted aquifers. The rule plainly states : "An aquifer or portion thereof which meets the criteria for an "underground source of drinking water" in § 146.3 may be determined under § 144.7 of this chapter to be an "exempted aquifer" for Class 1-V wells if it meets the criteria in paragraphs (a) through (c) of this section. Class VI wells must meet the criteria under paragraph (d) of this section."

(a) It does not currently serve as a source of drinking water; and
(b) It cannot now and will not in the future serve as a sources of drinking water because:
(1) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

All AE applications have demonstrated that there were no drinking water wells that currently used the proposed aquifer exemption area by conducting a survey of water wells to demonstrate that no drinking water wells existed within the proposed AE Boundary. In a few cases where water wells existed within the AE Boundary, the wells were plugged and an alternate drinking water source was provided outside of the AE Boundary. Please note the underlined words above: "currently used". These specific words can be found in EPA's past Approvals to TCEQ's predecessors (see **Attachment 1, EPA Aquifer Exemption Approval Letters**). A review of **Attachment 1** further shows that the words currently used are synonymous or interchangeable with the words currently serve (see the more recent EPA approval letters).

These numerous demonstrations were based on wells documented in the public record as well as on-the-ground surveys that were completed within and around the proposed AE boundaries. Detailed maps and tables clearly identified all wells. With regard to the presence of drinking water wells, the standard of proof was that no drinking water well was physically located within the lateral bounds of the proposed aquifer exemption boundary. In some limited instances, as noted above, existing water wells within the proposed AE Boundary were plugged and an alternative source of drinking water was supplied to the landowner by the uranium mining company. These water well inventories served as the basis for the AEs issued by Region 6 as non-substantial revisions to the UIC program.

The applications also contained adequate geological information within the permit applications that demonstrated that the proposed AE area contained commercial quantities of uranium. This demonstration was accepted by Region 6 throughout the history of the industry in Texas. The commercial amounts of uranium present satisfied the second prong of the rule: "it is mineral producing or can be shown by a permit applicant to contain minerals that are expected to be commercially producible" (see Region 6 Approval Letters in Attachment 1).

The purpose of this AE summary is fourfold: (1) to demonstrate to Region 6 that the notion that previous AEs were only issued for uranium operations that were very remote from existing area water wells is inconsistent with the historical record, and that the Goliad site is unique in that it is not like the settings where other AEs were issued; (2) to show that EPA Region 6 has consistently issued AEs via concurrence with the TCEQ and its predecessor agencies based on the plain language provided in 40 CFR 146.4; (3) to show that the litmus test that was used to demonstrate that the proposed aquifer exemption areas were not currently being used for drinking water was to present a water well inventory showing that drinking water wells were not, or would not, be located within the AE Boundary.

If the inventory showed that no drinking water wells were located within the lateral bounds of the proposed AE area, then it was determined that the aquifer is not currently serving as a drinking water source; and (4) to provide excerpts from two court cases that clearly ruled that the **test** for whether an aquifer is currently serving as a source of drinking water is based on whether or not drinking water wells are actually located within the lateral bounds of the proposed AE area.

Historic AE Area Settings

As Region 6 noted in their May 2012 letter to TCEQ, the region has approved over 30 AEs when it can be demonstrated that applicant meets regulatory criteria (see footnote 2 in the Region 6 letter). Of course Region 6 issued over 30 AEs based on the appropriate regulatory criteria, they would not have legally done otherwise. And the regulatory criteria that Region 6 acted on over the past 30 years are noted above in the opening paragraph. The following summary is provided to show concrete examples that Region 6 has approved AEs for uranium projects that in fact had nearby drinking water wells. Some of the settings described below were not at all unlike the setting at Goliad. Please refer to **Attachment 2 Water Well Inventories** when reading the summaries below.

U.S. Steel's Moser Mining Project

The first Attachment shows a map of the project permit boundaries and their respective names (Boots, Clay West Shallow, Burns, etc.). Also shown on the map are a large number of water wells. Each well has a number which is cross-indexed to Table 7A – Area Water Wells. A look at the table shows there are 99 water wells in and around the uranium mine areas. Obviously, this is not a remote setting without water wells.

Mobil Oil Corporation, Energy Minerals Project

This Attachment includes a cover letter from Mobil Oil Corporation to the Texas Department of Water Resources (TDWR) as part of the company's permit application for its ISR uranium mine and a table titled Attachment 7 – Water Supply Wells. As can be seen from the table, there are 30 area wells. Of the 30 listed wells, 16 are for human consumption.

Tenneco Uranium, Inc. West Cole Project

The third Attachment includes information taken from an Environmental Assessment written by the Texas Department of Health (TDH), Radiation Control Branch in 1981. At that time, TDH had the

regulatory authority to review and issue Radioactive Material Licenses for ISR uranium operations. Figure 1 in this Attachment is a regional map showing 9 separate uranium mining operations near the towns of Hebbronville and Bruni, Texas. Admittedly, the setting in and around Bruni and Hebbronville is not a bustling metropolitan area, neither is it in the middle of nowhere. The towns have a number of businesses, hotels, restaurants, schools, landowners with water wells, etc. A page (see page 8 in the Attachment) copied from the company's mine application states that there are 28 water supply wells within 3.2 km of the West Cole Project. **Please note that the West Cole project is one of 9 uranium projects between Bruni and Hebbronville.** To get an idea of how many water supply wells there actually were when these mines were being permitted and issued AEs, one would have to compile all of the water well surveys that were done for each project. The fourth Attachment in this document provides a little more insight into what the water supply well situation was when Total Minerals Corporation filed for a major amendment to its RML in May 1989.

Total Minerals Corporation's West Cole Project

This attachment begins with a copy of the transmittal letter from Total Minerals Corporation to the TDH regarding its West Cole uranium project. The attachment also contains page 6 from Chapter 8 of the Amendment Application. As can be seen from this page, it was reported that a water well inventory was conducted and a total of **36 water wells were identified within 1 km of the permit boundary.** Of these 36 water wells, **24 were drinking water wells** (see enclosed Table 8.2 in Attachment 4). Again, this setting could not be accurately described as a remote area without nearby drinking water wells.

Wyoming Mineral Corporation's Lamprecht Project

Compared to some ISR sites, this project had fewer existing water supply wells. As shown in the information (see map titled Location of Water Wells at the Lamprecht Facility and Vicinity), the site had just a few wells.

Texaco Inc.- Sunoco Energy Development Company – Hobson TEX-1 Project

This project was developed in 1984. The information provided herein shows that the site is described as being generally reflective of the county (Karnes County). The land use included cattle grazing, agricultural crops, oil and gas production and light residential. It is interesting to note that page 26, which was copied from TDH's Environmental Assessment (EA), states that there are three residences within the license area. As can be seen from page 66 of the EA, the applicant located 37 water wells within 2.5 miles of the license area. To get a better idea of where some of these wells were, a map from the EA is enclosed. The map shows that there were 12 wells within 1 km of the site and 4 of the wells were within ¼ mile. Yet again, this setting cannot be accurately described as remote with no nearby water wells.

Departing from the subject of water well inventories for a moment, it is interesting to note that on page 69 of the EA, TDH stated: "As expected, concentrations of radium-226 are notably higher than in regional wells." **The reason TDH expected radium-226 to be higher in the water wells within what was to become the AE area, is that there was a uranium ore body at the site.** Also, since every ISR mine

application documented that water quality within and near uranium ore body obviously has higher concentrations of radium-226, TDH was not surprised. **The water in these aquifers far exceed the drinking water standard of 5 pCi/l radium-226.**

Uranium Resources, Inc. Kingsville Dome In Situ Uranium Leach Project

The enclosed information shows that URI's Kingsville Project had 9 water supply wells within 1 km of the site. In addition, there were 10 major water supply wells within 5 miles of the site and the city of Kingsville is nearby. Tables 4 and 5 from URI's permit application show the well owners and the water use.

In summary, the information presented above objectively demonstrates that AEs have in fact been issued for areas that are not unlike the Goliad setting.

Interpretation of 40 CRF 146.4, Criteria for exempted aquifers

Attachments 3 and 4 titled **Western Nebraska** and **UEC's Contested Case**, respectively provide the most cogent and succinct statements on the test for determining whether an aquifer or portion thereof is **currently** serving as a source for drinking water. The rulings of two judges are perfectly in line with how EPA and Texas have assessed and approved aquifer exemptions to date.

Attachment 1

EPA Aquifer Exemption Approval Letters

Attachment 2

Water Well Inventories

Attachment 3

Western Nebraska

Attachment 4

UEC's Contested Case

Administrative Law Judge's

Proposal for Decision

(Key Excerpts Regarding Test for Current Use)